

Claims

1. Process for numbering objects, such as securities, banknotes, checks and cards and other similar objects arranged in rows and columns on a substrate and receiving a
5 number with p digits, composed of digits 1 to s, s+1 to r and r+1 to p, said process being characterised in that
for a substrate carrying k columns and n rows, whereby $k \cdot n$ is smaller than 10^s , s being smaller than p, the start value of digit s+1 to digit r of the serial number of each object is calculated for each first substrate of a run of 10^s successive substrates with the formula
10 $Z = (j-1) + (i-1) \cdot n + (m-1) \cdot (k \cdot n)$,
whereby j identifies the line of the object, i identifies the column of the object and m identifies the run of 10^s successive substrates.
2. A process as claimed in claim 1, whereby the numbering is carried out
15 downwards and the formula is $Z = D/10^s - ((j-1) + (i-1) \cdot n + (m-1) \cdot k \cdot n)$, whereby D is the serial number from which the downward numbering starts.
3. A method for processing a substrate in the form of sheets or web, wherein each
sheet or each repetitive length of web contains objects arranged in k columns and n
20 rows, said objects being numbered with a number containing p digits, comprising digits 1 to s, s+1 to r and r+1 to p, wherein piles of q sheets or of q repeat length of web transformed into individual sheets are formed and processed into packs of individual objects by cutting said rows and said columns, whereby q is dividable with an even result by 10^s , the packs resulting from the sequential cutting of successive piles forms a
25 continuous flow of objects sequentially numbered by the process of one of claims 1 or 2.
4. A numbering box for typographic numbering in sheet or web fed printing
machines, said box numbering with p digits, comprising digits 1 to s, s+1 to r and r+1 to
30 p, $k \cdot n$ items on said sheets or web for allowing a sequential collecting of said items in the finishing and collating process of layers of q sheets or of web cut into layers of q sheets, said box being characterised by

a purely sequential actuation for digits 1 to s, where 10^s is smaller or equal to q, and
a purely individually settable actuation for digits s+1 to r, where the maximum number
printable by digits 1 to s and s+1 to r is smaller or equal to $k \cdot n \cdot q$, and
a sequential actuation for digits r+1 to p.

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5. A box as claimed in claim 4, characterised in that said p digits are printed with
corresponding numbering wheels (1,2,3,4,5,6,7).

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6. A box as claimed in claims 4 or 5, characterised in that the purely sequential
actuation for digits 1 to s is made by mechanical means.

7. A box as claimed in one of claims 4 to 6, characterised in that said purely
individually settable actuation for digits s+1 to r is made by independent drives (15,16).

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8. A box as claimed in one of claims 4 to 7, characterised in that said sequential
actuation for digits r+1 to p is electromechanically initiated.

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9. A numbering machine for numbering objects such as banknotes, securities,
passports and other similar objects placed on a substrate, said machine being
characterised by at least one numbering box according to one of claims 4 to 8.